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Introduction

About 70 percent of the U.S. population is served by centralized sewage treatment plants. Most of the other 30 percent use onsite wastewater treatment systems (OWTS), also known as septic systems, which function as miniature sewage treatment plants, including the use of bacteria to break down organic wastes. Like larger plants, septic systems produce sludge, which must be pumped out periodically. Improperly constructed and poorly maintained septic systems contribute to pollution and may result in bacterial and viral contamination of the soil surface and surface waters or ground waters, which may adversely impact drinking-water supplies.

The purpose of the Onsite Sewage Program in Missouri is to minimize the threat to the health and safety of Missouri's citizens and visitors due to improper treatment and dispersal of onsite wastewater. Domestic wastewater must be properly managed to avoid public health problems. Three types of wastewater handling systems can be used in Missouri communities: onsite and cluster (decentralized) systems, and centralized systems.

Jurisdiction over wastewater treatment systems in Missouri is divided between DHSS and the Missouri Department of Natural Resources (DNR). Conventional and alternative soil based treatment systems that treat up to 3,000 gallons per day of domestic wastewater and lagoons serving single-family residences are within the scope of DHSS laws and rules governing onsite systems.

All other lagoon systems, systems with permitted discharges, soil treatment systems with actual or designed daily flows of more than 3,000 gallons, and systems treating non-domestic wastewater are under the authority of DNR. In addition, residential housing developments are under DNR jurisdiction. Developers must get approval for the use of onsite systems from DNR for new developments with 7 or more lots or the addition of 3 or more lots to a previously exempted development. Residential housing development regulations also apply to motels, resorts, and camps, etc. with 7 or more units or 3 additional units. DNR regulations require existing developments to have been exempted or approved for the use of onsite systems before the developer or lot owner begins construction or applies for an onsite wastewater treatment system construction permit. Refer commercial or industrial facilities and developers to DNR; the Minimum Construction Standards require these facilities and developers to contact DNR concerning compliance with the Missouri Clean Water Law and Regulations before applying for an onsite wastewater treatment system construction permit.

Onsite systems usually treat the wastewater from one residence on site. However, cluster systems serving up to about 8 homes can be permitted under onsite system authority. Onsite systems are very common in Missouri, and generally found where homes are not close together. Conventional OWTS consist of a septic tank that retains the wastewater solids and a soil treatment field (absorption field) where the septic tank effluent is distributed. In the absorption field, natural physical, chemical and biological processes purify the wastewater as it moves through the soil. Conventional systems are most efficient on large lots with deep, permeable soils. Lagoon systems are suited to large lots with slowly permeable soils.

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A variety of alternative OWTS designs are available to accommodate a range of difficult site and soil conditions. The most appropriate system depends on factors such as how permeable is the soil, how high is the water table, and how shallow is the bedrock. Poorly sited, designed, installed, or maintained systems can result in surfacing effluent. Surfacing effluent is considered a health hazard and will require corrective action. Because maintenance is the only factor that can be controlled once an onsite system is installed, a program of public education can help ensure that owners are having their system inspected and/or pumped periodically and putting only appropriate materials down the drain.

Authority

Authority to regulate onsite wastewater treatment systems comes from the Revised Statutes of Missouri 701.025 to 701.059 RSMo, and the Code of State Regulations 19 CSR 20-3.060, 3.070, and 3.080. Together these can be found in the Onsite Sewage Program reference manual at: http://www.dhss.mo.gov/Onsite/onsite_ref_book.pdf. Jurisdictions may have their own ordinance, contract with the state, or be directly regulated by the Missouri Department of Health and Senior Services. Regulation under a local ordinance can be more stringent. Type of onsite authority by county is shown on a Missouri map available at: <http://www.dhss.mo.gov/Onsite/authoritymap.html>.

Property owners of all buildings where people live, work or assemble shall provide for the sanitary disposal of all domestic waste. Sewage and waste from such buildings shall be disposed of by discharging into a sewer system regulated under Chapter 644 RSMo, or shall be disposed of by discharging into an onsite wastewater treatment system operated as defined by rules promulgated under sections 701.025 to 701.059 RSMo.

The owner of a single family residence lot consisting of three acres or more, or the owner of a residential lot consisting of twenty acres or more with no single-family residence onsite system located within three hundred sixty feet of any other onsite system and no more than one single-family residence per each ten acres in the aggregate are excluded from Missouri regulations unless the lot is adjacent to a lake operated by the Corps of Engineers or by a public utility. To be exempt, these property owners cannot contaminate surface waters or groundwater, create a nuisance or public health hazard, install any part of the system closer than 10 feet from their property line, or discharge wastewater off of their property.

Owners of non-residential establishments, regardless of acreage, and multi-family residential lots not excluded according to the paragraph above, must comply with all provisions of section 701.025 to 701.059 RSMo and all rules promulgated thereunder.

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